

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

62.67

FED

RECEIVED

JAN 18 1930 ★

Department of Agriculture.

SCOTT'S SEED GUIDE



*The front cover illustrates a use
of one of our most valuable crops,
namely Sweet Clover. Cattle relish
this excellent legume forage, as do
practically all other stock. We sug-
gest a careful reading of the Sweet
Clover article in the text.*

S C O T T ' S SEED GUIDE

for

1930

*containing worthwhile and usable
information about field seeds and
the crops they produce - - - -*

O. M. SCOTT & SONS COMPANY
MARYSVILLE, OHIO

CONTENTS

	Page
HOW TO KNOW GOOD SEED.....	4
NOXIOUS WEEDS	8
 LEGUME CROPS	
Soybeans	11
Sweet Clover	27
Alfalfa	37
Grimm Alfalfa	43
Red Clover	45
Mammoth Clover	47
Alsike	48
Crimson, White Dutch, Japan Clover	50
Vetch	52
Canada Field Peas	53
 HAY AND PASTURE GRASSES	
Timothy	54
Kentucky Bluegrass	54
Orchard Grass	55
Redtop	55
Pasture and Meadow Mixtures	56
 FORAGE AND CATCH CROPS	
Sudan Grass	58
Millet	58
Dwarf Essex Rape	59
 GRAIN	
Corn	60
Wheat	62
Rye, Barley, Buckwheat	64
LEGUME INOCULATION	65
HOW TO ORDER	68
WEIGHT AND QUANTITY CHART	72

FOREWORD

O.M.Scott & Sons Company

~~ESTABLISHED 1852~~

Marysville, Ohio

January 1930

To the Buyer
of Field Seeds

Dear Sir:

The changes that are constantly taking place in the business of farming are not of such a radical nature that each year becomes an entirely different problem from the preceding one. Improvements in farm methods and practices come about very gradually because they must first be tried and proven.

For that very reason a publication such as this cannot be made wholly new each year. It must contain much of the old, all of which we believe bears repeating, but enough of the new that no matter if you have carefully read each of the previous twenty issues, you will profit immeasurably by reading the latest one.

There is much new material in the section on Scybeans. And you'll find additional space devoted to weed control. Important facts about Alfalfa and the clovers have been added, too, along with pages of other money making data.

Our old friends will find Scott's 1930 Seed Guide a review and a new lesson combined. Those who receive this book for the first time, are invited to give it thoughtful reading from cover to cover. Devote an evening to it and we are sure you'll feel well repaid.

Cordially yours,

O. M. SCOTT & SONS CO.

D.G. Scott



How To Know Good Seed

The qualifications which usually determine whether seed is good, are freedom from weeds, absence of waste or inert matter, good germination. Of these three the most important is freedom from weeds. Sowing chaff or dead grains wastes money on that particular crop, but this is usually the extent of the damage. Sowing weeds, however, not only wastes money on the particular crop—by robbing the soil of plant food and moisture, increasing harvest costs, lowering the value of the crop—but also puts weeds on your farm which will decrease the value of future crops. It will pay you to carefully examine the seed you intend to sow, to avoid sowing weedy seed. A means of identifying some of the worst weeds is given on pages 8 and 9.

Your own State Department of Agriculture will analyze seed samples for you without charge. This is the best way to learn the real value of seed, but if it isn't convenient to wait for their report you can determine for yourself what the seed you propose buying is actually worth. A certain yet simple method is given here.

Test for Purity

Take a level teaspoonful of each of the seed samples which you want to examine. Place them in separate piles on a piece of white paper. Scrape to the side of each pile all waste matter, such as weed seed, chaff, and dead grains. This operation will show you the amount of worthless matter in each lot and is your guarantee of getting pure seed and your money's worth.

Remember, that a bushel of seed will contain six thousand times the waste matter or weed seeds found in a teaspoonful, and that three weeds in a teaspoonful means that one will be sowed on every square yard of ground.



Test for Germination To make a germination test, remix the seed and count out 100 seeds. Be sure to take them just as they come, and do not choose the best grains for the object is to find out what percentage of the total seed will grow.

The seed may be planted in a box of moist dirt or sand, or may be put between two blotters or strips of canton flannel, placed on a plate covered with another plate turned upside down. This prevents evaporation. Keep the blotters moist, but not in water, and as near the temperature of 70 degrees as possible. Examine the seeds daily and see how they are germinating. Sprouted seeds may be removed each day if desired. Some seeds require a longer time to germinate than others. The proper germinating periods are as follows:

Clover seed between three and six days.
Timothy and Red Top, five to eight days.
Orchard Grass, six to fourteen days.
Kentucky Bluegrass, fourteen to twenty days.

The use of these tests has convinced many seed buyers that it is to their decided advantage to sow Scott's Seed every year. They write us that they are grateful for a source of good seed, and prove this by sending us their orders each season. In speaking of Scott's Seed Mr. C. B. Wright, of Pierpont, Ashtabula County, Ohio, says:

"I am at present working up a combined order for your soybeans among our neighbors. My father, C. H. Wright, now retired, and myself have used your seeds with satisfaction for years. We have found that it does not pay to gamble with seed of unknown quality."

There are very definite reasons why our customers are not buying seed of "unknown quality." The business was founded for the purpose of supplying field seeds of the best possible quality, and, above all things, free from weed seeds. The next few pages tell how we are able to do this.



Why Scott's Seeds

If there was ever a favorable time to sow Scott's Seed, this is the year. There was an unusually large production of red, mammoth and timothy seed in our own vicinity so that it will be possible to supply Scott quality seeds of these important varieties, at practically the same price that ordinary seed will be selling.

*Carefully
Selected*

To furnish seed of Scott quality it is necessary for us, first of all, to select it carefully. More than 50% of the seed which we examine in the selection of our stocks is rejected because it cannot be recleaned to our minimum requirement. Some weed seeds cannot be removed, no matter how many times the seed is recleaned.

Another important precaution in selecting the different kinds of seed is to get that which we know is adapted to growth in the sections where our customers expect to sow it. Sowing unadapted varieties of seed almost always results in failure. Most of the imported seed, and much that is grown in our own country, is not satisfactory for use in the central, eastern and northern portions of the United States. This is especially true as regards the winter hardiness of alfalfa. You can buy Scott's Seed with the assurance that you will get seed adapted to growth in your territory.

"I have tried your seeds by the side of other seed and have found your seeds to be the best I have ever sowed and will order from you as long as I need seed."—W. O. Caplinger, Windy, Wirt County, West Virginia.

*Carefully Recleaned*

Even after we have carefully selected the seed, the battle is only half won. Waste matter, and more particularly weeds, must be removed by thorough recleaning. This is done very carefully and in a way that causes customers to write us their appreciation as does Mr. E. F. Schleiger, No. 1, Eaton, Preble County, Ohio.

"We have 40 acres sown with Scott's Farm Seed and a perfect stand all over, and free from wild weeds. I want to thank you for it."

While Scott's Seed is carefully selected and thoroughly cleaned it actually costs you less than ordinary seed in which there is certain to be many weeds and much waste matter. The large amount of bulk we remove in the form of waste matter and weeds means much more to the purchaser than any slight difference in price.

Fifty pounds of pure, practically weedless, clover seed will give you a more profitable stand on a five acre field than will 60 pounds of inferior seed. That means that instead of paying \$15.00 for a bushel of inferior seed, you could better afford to buy 50 pounds of a \$17.00 grade of seed which would cost you only about \$14.50 and yet produce a better crop. To the seller there is always a bigger profit on second grade seed. To the sower there is always a bigger profit on pure seed.

"I am enclosing my spring order for seeds. You people have surely treated me right and always furnished good seeds. It is so free from weeds and waste matter that I find it goes farther in sowing."

If less impure seed were sown farmers would be making more money."—F. J. Foxbower, Pleasant Plain, Warren County, Ohio.

Noxious Weeds

The real way to fight weeds is to refuse to buy inferior seed, which usually contains weed seeds. Believing that the *prevention* of weeds by sowing pure seed will go a long way in eradicating them, we are describing and illustrating here a few of the worst ones.



BUCKHORN. Found very often in clover and alfalfa seed, as it is practically the same size and cannot be cleaned out except by special machinery. The seeds are brown, hollow grooved on one side, and moisture causes them to become sticky.

This perennial can be controlled by cultivation and sowing pure seed. Badly infested fields should be plowed up and worked under a short rotation of crops.



CANADA THISTLE. Found in timothy, alfalfa, clover, Canada bluegrass and small grain. This perennial usually grows in patches and is considered the worst weed in many northern states.

Can be eradicated best during drought. All plants must be destroyed, a good plan being to starve the underground parts by keeping down the top growth. A good method is to smother it out by using alfalfa as described on page 38.

Some use a chemical spray, such as sodium chlorate, to eradicate this pest. Sprays are usually considered as a last resource because of the expense and poisonous nature of the chemicals.

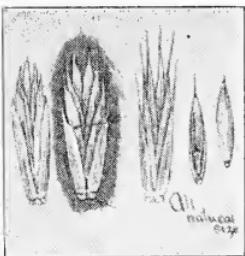


WILD CARROT. Also common in grass and clover seeds. As it is a biennial it can be gotten rid of by preventing seed development. It rarely infests fertile soils, and so where abundant an extra effort should be made to build up the soil.



DODDER. Parasitical plants that attach to and live upon clovers and alfalfa. Seeds about the size of al-sike, yellow-brown in color, pebbly surfaced, *s o m e w h a t* spherical in shape often with two flattened surfaces. The plant grows from seed only.

Sow Clean Seed. In small areas cut infested plants close to ground, let dry and burn after soaking with kerosene. Large areas should be plowed before the seeds ripen and the field kept in cultivated crops for several years.



QUACK GRASS. Considered by some as the most obnoxious weed. Its mischievous part is the jointed branching underground root system. Spreads rapidly by means of root stocks carried on farm tools. Resembles somewhat a slender head of wheat.

Can be eradicated in one season if no green leaves are allowed to develop. This can be done by covering infested areas with straw or tar paper so no light gets in or by putting the land under intensive cultivation.



The Legumes

The crops discussed in this guide are divided into four groups as follows:

- I. Legumes
- II. Hay and Pasture Grasses
- III. Forage and Catch Crops
- IV. Grains

Legumes are given first place in our discussion. These are the soil-builders. Their agricultural importance is great because:

- being rich in protein, they have a high feeding value;
- they help to maintain, and even to increase, the fertility of our soils.

Their soil-improving ability is due to the fact that legumes alone act as hosts for those beneficial soil bacteria which live in nodules on their roots, and enable the plant to gather nitrogen from the air without cost. However, in order to do this the plant must be inoculated with the proper bacteria.

Legumes should be included in every rotation. Their yield is not so dependent on the nitrogen fertility of our soils, as are grains and grasses and so a fair legume crop may be produced on a soil which would produce only small yields of the former.

SOYBEANS

Each succeeding year we become more enthusiastic about Soybeans. Here is a legume that is valuable not only as a feed and soil improvement crop but also as a cash crop with a definite market. Truly; Soybeans are rapidly becoming one of America's leading farm crops.

THE future prospects for Soybeans are especially bright as there is practically no danger of over-production.

New uses are being developed rapidly, particularly in the manufacture of human foods, fertilizers, paints, explosives and lubricants. In the meantime, their value as a stock feed will be appreciated even more as the Soybean becomes better known.

Soybeans can be raised more easily than any other legume. They will grow on soils too acid for clover; are not much subject to disease or insect injury; fit readily into crop rotations; can be planted anytime from early spring to late summer; are drought resistant; and the cost of the seed is relatively low.

Because of many varieties, with different climatic requirements, it is possible to utilize Soybeans in practically the entire United States and in southern Canada. Some varieties will mature as far north as central New York while others will not ripen except in the south.

Utilizing Soybeans

Soybeans may be used advantageously as either a seed or forage crop, that will fit readily into rotations. The beans make an excellent stock feed, either whole, or ground alone or with other grains. Soybean hay is equal in feeding value to alfalfa hay. Another method of utilizing Soybeans is as a pasture crop, either grown alone or in combination with corn. Then too, the market for the seed provided by oil mills and other commercial concerns should not be overlooked.

Hay

As a hay crop Soybeans show up especially well, and it is probably for this use more than any other that they are appreciated. A satisfactory yield of highly nitrogenous hay can be produced which is uniformly good for all classes of livestock.

Soybean hay is an excellent and palatable feed for dairy cows. It is equal to red clover, alfalfa or cowpea hay in milk and butter production. According to the Illinois Station it will take the place of alfalfa hay in feeding ewes and fattening lambs.

For all Stock

It will also suffice as the sole leguminous roughage in the winter ration for horses.

“Grow Soybeans” is the answer to the yearly problem of stockmen as to how to produce more legume hay. They will fit into any rotation and provide a good substitute when clovers have winter killed or failed to catch.

The best variety of Soybeans for hay is one that is tall and has slender stems. The low growing kinds bear leaves and pods too close to the ground for entirely satisfactory harvesting. The Wilson, Peking, and Virginia varieties are probably the most desirable in the central states and generally produce the most abundant hay. On heavy clay ground the Virginia does particularly well. The best earlier hay varieties are Manchu, Midwest and Mansoy.



Pasture

By growing Soybeans it is possible to have a good green pasture during August and September when most other pasture crops are dry and undesirable. Stock may be turned into the pasture when pods are formed and the foliage still abundant and green. With hogs pastured in this way, and having a part ration of corn too, an increase of 400 pounds of pork per acre may be expected from the Soybeans. Sheep or lambs do especially well and will show gains of approximately 350 to 500 pounds of meat per acre. They will not only clean up the beans, but weeds as well making conditions ideal for the seeding of fall grains.

Soybeans and Corn

Growing Soybeans in corn is recommended as a good practice to provide pasture for sheep and swine. In spite of the fact that the corn crop is probably reduced thereby, this practice is not objectionable as the purpose in modern farming is to raise the maximum amount of balanced ration feed rather than large yields of grain.

Swine and sheep can be turned into Soybeans and corn about September first. Lambs or pigs up to 50 or 60 pounds will eat the beans without damaging the corn thereby making it possible to harvest this later if it is so desired. If the entire crop is to be pastured sheep or hogs of any size may be turned in. The stock will take on fat and improve in general condition wonderfully. Unless weeds are apt to bother it is well to plant Soybeans in all corn fields where possible to utilize them. Among the chief problems of the farm is economical harvesting of the corn crop and the return of manure to the land with the least possible loss or waste. Harvesting well balanced companion crops of corn and beans the livestock way solves both of these problems at once.

It is a good plan, if convenient, to feed Soybeans to stock a few days before they are put into the field, so that they will become accustomed to, and eat the bean readily, otherwise the larger animals will favor the fresh corn.

Seed

Several methods of utilizing the Soybean seed are available to those who produce it. The beans can be used either as a stock feed, or sold to commercial firms who have developed markets for various Soybean products.

Feeding Value

Because of their high food value, the entire substance of the beans makes an excellent feed either whole or ground. Whole beans are often fed in self-feeders to swine and sheep. The Indiana Station found that the whole beans produced a gain of 29 pounds

in lambs as against 25 pounds for cottonseed meal when fed as a supplement to corn. They also found that one pound of Soybeans fed to spring pigs replaced a pound of tankage. Ground beans make an excellent dairy or beef cattle feed and will replace linseed oil meal to advantage.

Oil Mill

Several oil extracting mills located principally in Ohio, Indiana, and Illinois can use many more beans than it has been possible for them to buy. Some of these mills will contract in advance for the beans guaranteeing to pay a minimum price, regardless of

the market, without any obligation on the part of the grower if he decides to sell elsewhere. This has stimulated the production of Soybeans especially where they can be raised in large acreages. This policy will help reduce the acreage of some cash crops that usually run into the surplus stages.

One by-product of the oil mills finds its way back to the farm and that is, the residue after the oil has been extracted. This is called Soybean oil meal and is as rich in protein as the best grades of cotton seed or linseed meal.

If Soybeans are to be grown for seed production the variety selection should be given careful consideration. Not only is it important that a type be selected which will mature seeds in the section planted, but it must also be a variety that will hold the seed well without much loss from shattering.

Silage

The seeding of Soybeans with corn for silage is very generally practiced. However, there is considerable difference of opinion as to whether worthwhile yields are received, and as to the feeding value of this silage mixture. Sometimes the two crops are grown separately and then put into the silo at the rate of three loads of corn to one load of beans. It is important, in growing Soybeans for this purpose, to plant a variety that will make not only a maximum growth of vine, but also develop beans by the time the corn is ready for the silo, and retain the leaves until the crop is gotten into the silo.

Green Manure

Plowing under a crop of Soybeans for soil improvement is a good plan seldom followed. Some of the benefit can be gotten by pasturing the crop and then plowing or disking the land. The plant residues and manure are returned to the ground and at the same time a nice profit is taken off in the stock fed.

Soil Requirements and Preparation

Soil and Climate

Soybeans will succeed on nearly all types of soil. They will do better than any other legume on soils that are acid or of low fertility. In general the soil requirements are about the same as those of corn, provided the proper bacteria are present or the seed is inoculated.

This legume is well adapted to both the corn and cotton belts. In the southern part of the corn belt the larger and later varieties, which give yields that make their cultivation

profitable, can be grown. In the central section medium early varieties are grown successfully for forage and ensilage purposes and the earlier kinds for the production of seed.

*Seed
Bed*

Like corn, Soybeans respond to good seed bed preparation. It is advisable to plow the heavier soils, even on corn stalk ground. Both the Ohio and Indiana Stations secured substantially better yields when the corn stalks were plowed under rather than disked.

Before seeding the ground should be cultivated at intervals as Soybeans may be crowded out by a rank growth of weeds.

*Sow Good
Seed*

There are several different methods of planting Soybeans, the method used depending somewhat upon the purpose for which the crop is intended. Unsatisfactory results are very often due to the use of the wrong variety for the purpose intended. Very early

varieties should not be planted for hay and silage nor should late beans be planted for seed production. It is highly important, then, that seed should be procured from a seedsman who is thoroughly familiar with the different varieties. Since we have handled and studied Soybeans for so many years we feel well qualified to suggest the proper variety to fit your needs. It is also well to guard against the presence of wild morning glory in the seed. Many beans, too, are put on the market before they are well cured so that the germination is apt to be low. A wise precaution is to plant Scott's Soybeans.

Seeding

*When
to Plant*

It is possible to plant Soybeans anytime after all danger of frost is past and the ground is warm. Common practice seems to be to seed a few days after corn planting time, the advantage being that the ground can be given an extra cultivation to kill weeds and then too, the press of other farm work is usually

not so great. However, earlier planting will ordinarily result in larger yields of both hay and seed. If a seed crop is to be raised the seed should be planted as early as possible but for hay or green manure even August first is not too late, the variety used making some difference. Generally speaking, Soybeans may be planted anytime in May or early June with good results in the vicinity of the 40th parallel.

Inoculation In common with other legumes Soybeans are able to utilize the nitrogen of the air when the proper bacteria are present in the soil. The presence of these organisms is indicated by development of nodules on the roots. In ninety-nine cases out of one hundred if the seed is not inoculated no nodules will develop, unless a crop of inoculated Soybeans was grown on the land previously.

While the plants which have not been inoculated may appear to grow as well as those which have been inoculated they will do so at the expense of the soil. Another thing, when Soybeans are inoculated the protein content of the



Drilling Soybeans in a well-prepared seed bed.



forage and seed is greater. Uninoculated plants usually have a pale green or yellowish color as contrasted to the darker green of the inoculated plants. A special price on Scott's Bacteria for Soybeans makes the cost of inoculating the seed reasonable.

Depth The depth of seeding is of much importance, as poor stands often result from covering too deeply. The most favorable depth will depend upon the type of soil, but in general should not be over one or possibly one and one-half inches.

Well selected seed is necessary for best results in growing Soybeans. A chipped or cracked seed is unsafe, broken and split beans produce nothing but a loss as they prevent a full seeding. Worst of all is the presence of weed seeds.

We have the most improved machinery for cleaning Soybeans and believe that we are furnishing better seed than can be secured most places. Scott's Soybeans are free from wild morning glory as well as other noxious weeds and are always of good germination.

**For Hay
and Pasture** Drilling the seed solid, using the oats feed of a grain drill, has proven to be the most practical method of raising Soybeans for hay, pasture, silage or soil improvement. The exception to this rule is when weeds are apt to be bothersome. By planting solid the forage produced will be of finer quality and there will be an intensified use of atmospheric nitrogen. The usual quantity sown is one and one-half to two bushels per acre depending upon the size of the seed.

**For
Seed** In planting Soybeans for seed production they are often seeded in rows in order to make cultivation possible. The weeds can be kept down and the seed may mature to a larger size and better quality. A grain, beet, or bean drill can be used by stopping up part of the holes. Formerly when seeding in rows about



15 to 25 pounds of seed was sown to the acre but now the larger producers find that it repays them to sow 45 to 60 pounds, or even more, by placing the seed closer together in the rows. The rows may be from 14 to 32 inches apart depending upon the available equipment for planting and cultivating. The seed should not be planted more than one to one-half inches apart in the rows. Most growers recommend solid planting even for seed. This is satisfactory if the ground is not weedy and a rotary hoe or like implement is available for cultivation. This method takes more seed but less cultivation. About 90 to 120 pounds should be sown per acre.

*With
Corn*

By using a bean attachment on the corn planter Soybeans and corn can be planted at the same time. If necessary the beans can be planted after the corn by carefully retracting the rows and planting not over one inch deep. The corn is drilled at the usual rate and the beans at about six to eight pounds per acre.

Soybeans may be mixed with cowpeas, sorghum or sudan to make a balanced forage. 10 pounds of sudan or sorghum mixed with 45 to 60 pounds of Soybeans makes a good hay. Sudan matures quickly and should be used with early manufacturing varieties only.

Sowing oats with Soybeans is becoming popular. By harvesting the crop when the oats are ripe an unusually rich feed is provided.

Cultivation

In case a heavy crust forms before the beans are out of the ground it is well to break this crust so the plants won't break their necks in coming through. A spiked harrow or rotary hoe does this job well. Sometimes the soil gets so hard a rotary hoe will not break it. In that case a disk set straight does a good job with surprisingly little damage to the beans. Soybeans seeded in rows are

commonly cultivated with corn machinery. This cultivation is usually conducted from about the time the plants are three inches high until they are ready to bloom. Three or four cultivations are usually sufficient.

Solid seedings are best cultivated with a rotary hoe or possibly a weeder or harrow. The stand can be worked from the time the plants are three inches high until they are about eight inches high, or, until they make enough shade to discourage weed growth. It is well to start the rotary hoe when the seeds are just sprouted and peeping through the ground.

Cultivation should be done during the heat of the day when the plants are dry and tough as they are tender when wet.



Using a weeder in cultivating soybeans planted in rows. This does a good job in loose, mellow soils.



Harvesting

For Hay

The time to cut Soybeans for hay will be determined by weather conditions, press of other farm work, and the variety of beans. Ordinarily, the earlier varieties can be cut before the first of September and so the work will be out of the way by corn harvest and silo filling time. Soybeans may be cut for hay at any time from the setting of the seed until the leaves begin to turn yellow. They are most suitable for hay, however, when the beans are small and not well developed as when the beans are large the slowness of curing may result in mouldy pods. At this stage the quality of hay is usually the best. If the cutting is delayed the stems become more fibrous and decline in feeding value, and if left too long much loss in leaves will occur.

Soybeans are usually cut with a mower and left on the ground until wilted. Then they may be raked into windrows and allowed to complete curing. Sometimes the hay is taken up direct from the windrows. In rainy seasons it must be placed in tall, loose cocks for a week or ten days. This should be done while the plants are damp from dew, as they will be more tough and the leaves will not shatter as much. Rain generally does not hurt the quality of the hay except to discolor it. Some growers are convinced that Soybean hay cures better and quicker in the windrow than in the cock, even in rainy weather. Curing in this manner necessitates the use of a side delivery rake and that the windrow be turned occasionally to keep the bottom from moulding because of contact with the ground.

For Seed

Seed cures to best advantage on the stalk, so beans should not be cut for seed until absolutely necessary to prevent loss from shattering. A good guide is to wait until the pods are fully formed and brown and the seed in the hard dough stage. By this time most of the leaves will have fallen off. The grain

binder is generally used, but sometimes it is necessary to use a mower if the stalks are short or badly lodged.

If the beans are not allowed to get thoroughly ripened—some varieties must be cut early or too many beans will be lost—the crop should be put into cocks until well cured, otherwise the seed may be damaged when stored in bins or sacks.

**Combine
Harvesting**

There are great advantages in harvesting a Soybean seed crop with a combine. The saving in time is important and the beans can be harvested ready for storage for a much lower cost per bushel. But just as important is the fact that the beans can be allowed to get fully matured, thereby eliminating danger of spoilage. One objection to combine harvesting is the loss of straw which might otherwise be used as winter roughage. However, this is offset by the soil improvement furnished by the leaves, which contain much nitrogen.



Dumping Soybeans from combine into wagon. An excellent method of harvesting for the large grower.



Threshing The ordinary grain threshing machine may be used to thresh Soybeans. Some change in the concaves is necessary, and the speed of the machine must be cut to avoid splitting the beans. Some of the special pea and bean hullers on the market will also thresh Soybeans satisfactorily.

Varieties

It is said that more than 2,000 varieties of Soybeans have been studied and described in the United States. Of this list only a few have shown any real agricultural value.

In the following pages we describe the most popular varieties and those which our experience has proved best suited for the purpose intended. The number of days for ripening of beans will vary somewhat with the locality and weather conditions, and the time of seeding determines to a large extent the number of days it will take to mature the beans. Those seeded in early May will mature somewhat earlier than those seeded in June, but the difference of time of maturing will not be so great as the difference in planting dates.

Seasonal Variations

The date of maturity of the different varieties fluctuates considerable in different seasons. For example beans are, as a rule, much later in Ohio this year, and some varieties which are ordinarily the first to ripen are not reaching maturity until after some of the later kinds.



Name First and Second Choice

We attempt to furnish practically all important varieties of Soybeans and will have a few not listed here, but inasmuch as so many beans are much alike we suggest, especially later in the season, that in ordering, first and second choice be given.

Yellows

ITO SAN. Once the best known early variety. Still popular in some sections. Early maturing.

MANCHU. Introduced from Manchuria in 1911. Plants erect and well suited for "hogging off" with early corn. Is by far the most popular variety and has almost completely taken the place of other early kinds, such as Ito San, Early Brown and Black Eyebrow. Holds seed well. Early maturing.

DUNFIELD. Matures about the same time as Manchu. Suitable for hay or seed production. Has been popular in Indiana but has not equalled Manchu in yield in Ohio tests. Early maturing about same as Manchu.

MANSOY. Selected from Manchu by U. S. D. A. but matures ten days later than it. In many sections, although the seeds are larger, it is replacing Midwest, as a seed and hay type. Medium early maturing.

MIDWEST. Formerly called Hollybrook. Gives good results for hay or silage, but it is considered a little late for safe seed crops in the central states. Medium early maturing.

ILLINI. An Illinois Experiment Station selection, about five days earlier than Manchu. Primarily a seed type which gives good yields and holds its seeds well. Satisfactory for early hay. In Illinois, seed growers like it because of early maturity, little shattering, and good production.

MAMMOTH YELLOW. Too late for the north.



Blacks

WILSON. This variety has been in great demand since it was first offered by the Department of Agriculture. Probably the best known all-round variety for hay and silage. Stems are fine and it produces a large quantity of hay of the highest quality. Late maturing.

EBONY. Late maturing about same as Wilson, crop as last year quite short.

PEKING or SABLE. One of the best hay types, will grow well on practically all soils. Excellent for growing in corn for silage purposes. Medium late maturing about same as the Wilson. Because Wilson's are scarce and high priced this year, we recommend the Peking as the best purchase in the later kinds. As the seeds are small they go twice as far as Wilson in planting, and produce as much hay.

Browns

VIRGINIA. Grows tall and slender with twining tips, making it one of the most desirable beans for hay and for planting with corn for silage as the vining tendrils cling to the corn. It is the best hay variety for the heavier soils, but on real rich ground it is sometimes inclined to lodge. Late maturing.

Mixed Beans

Ordinarily it is possible to furnish mixed beans at prices lower than those prevailing for the separate varieties.



See Freight Paid offer page 71.

38 State Experiment Stations sow Scott's Seeds.

If weeds are worth more to you *out* than *in* sow *Scott's Seeds*.

Will have to say that the "Manchus" I got from you last season were the prettiest and yielded the best of any I have ever had.

ORTON MERRELLS,
Valley View Stock Farm,
Mason, Mason Co., West Va.

>Last year I made an order for twelve bushels of Scott's Soybeans and also enough bacteria to inoculate them. And, say, I want to tell you that *I did get one crop!* People that passed my farm and looked over my beans said that I had the best crop of beans in Magoffin County. I have already saved them and placed in barns. There are 310 shocks—20 big wagon loads.

Yours for great SUCCESS,

H. H. HACKWORTH,
Salyersville, Magoffin Co., Ky.

SWEET CLOVER

Interest in Sweet Clover first developed when its remarkable value for soil improvement was recognized. However, the rapid progress that the crop has made in recent years has been due also to discovery of its value as a pasture crop.

SWEET CLOVER has come to be known as "the universal plant" because it can be grown in nearly all parts of the world. Possibly this title has led many to believe that it will grow anywhere and under any conditions. Some are being sadly disillusioned about this as it will not grow in soils unadapted to it. A sweet or neutral soil is most necessary as is the presence of the nitrogen gathering bacteria.

Of the many varieties of Sweet Clover only a few have been shown to have any agricultural value. The white biennial is by far the most important and is the variety referred to unless otherwise stated. A discussion of several varieties is given at the end of this chapter.

Utilizing Sweet Clover

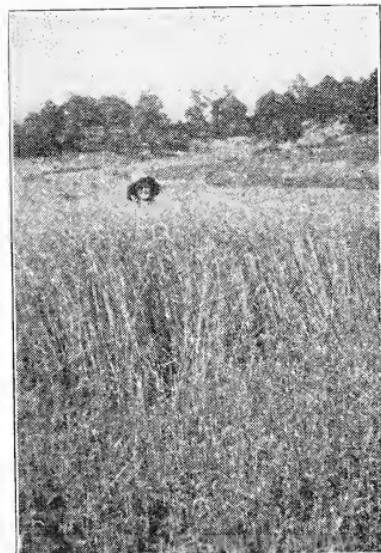
The extensive root system of Sweet Clover makes it a high-powered soil builder. Its roots will gather the little plant food remaining in worn-out soils, and their deep penetration improves the drainage. If properly inoculated a crop will add considerable nitrogen to the soil. Like other crops, Sweet Clover responds to the use of fertilizer and will give better yields on poor soils if phosphorus and potash are applied.

Because it is extremely drought resistant, once established, Sweet Clover will furnish good pasture when other pasture plants fail. At the same time it will carry more stock per acre than ordinary pasture crops.

First year Sweet Clover hay is equal to alfalfa in composition, palatability and feeding value. It is usually superior in protein content. Spring seedlings ordinarily produce tremendous yields when cut in August or September.

As a universal plant it leads all others, for it will not only grow in any climate, but also on soils where alfalfa fails. It has the same nitrogen fixing bacteria as alfalfa and so prepares the way for the latter by thoroughly inoculating the soil and by improving the drainage. It prevents erosion and seldom freezes out during the winter or spring. For many years beekeepers have recognized the value of this clover, as the honey from the flower is of good color and flavor.

Another important advantage of Sweet Clover is that it produces seed liberally wherever grown. The yields are high, averaging four to six bushels per acre, and sometimes as much as ten or twelve bushels is secured. The seed is ordinarily considerably cheaper than that of other clovers.



A stand of Sweet Clover on the farm of one of our good customers, Mr. Wm. C. Farrington, Bellville, Ohio. Think of the profit in a crop like this!

As a Green Manure Crop

Sweet Clover should be grown more extensively as a soil improvement crop, because, it will add nitrogen to the soil, supply an abundance of organic matter, and at the same time improve the drainage. One particular advantage of Sweet Clover is that it can be grown on land between crops of small grains so that the use of the land is not lost for a season as is the case with so many soil improvement crops.

Nitrogen Supplier

Why buy commercial nitrogen when Sweet Clover will take it from the air and pay you for doing it? At the Ohio State University Farm a four-year experiment showed that the least amount of nitrogen present in

Sweet Clover May 1, of the second year was 120 pounds per acre. Furthermore, this nitrogen is available to the succeeding crops as rapidly as they can make use of it. But, in order to provide this nitrogen, Sweet Clover must be inoculated with the proper bacteria, for without this it cannot secure nitrogen from the air and will not make a thrifty growth. Another unusual ability of Sweet Clover is that it can get to and make use of the less available sources of plant food. This is gathered from the deep layers of the soil by the roots, and when these roots decay the following crop is benefited by the stored up fertility. By this we see that Sweet Clover makes available, conserves and adds to the fertility of the soil.

Improves Drainage

Besides improving the soil chemically, Sweet Clover also improves it physically. The underground growth loosens the soil so that it plows more easily and at the same time the additional amount of humus is helpful in many ways. As the large roots decay,

they leave open channels through the hard subsoil, thereby greatly improving the drainage. Growers have found that Sweet Clover will put soil in such a condition that drain tile, which previously proved inadequate because of the increasing compactness of the soil, will then be able to keep the land free from water.



Plowing It Down

Extensive experiments have shown that the best time to plow under a crop of Sweet Clover is between April 20 and May 10 of the second year. At this time—the plants are killed without difficulty, a corn crop to follow can be planted early enough for maximum yields, and 80% of the greatest possible amount of nitrogen which can be accumulated is secured.

For All Stock

It has been proven (by the University of Illinois Station) that Sweet Clover is capable of carrying as much or more live stock than any other kind of pasture. A five-year average of Sweet Clover pasture, available the fall of the first year with the total available the second year, gives 150 pasture days against 101 pasture days for good blue grass. Sweet Clover is very high in mineral content, especially of calcium and so is particularly valuable for dairy cattle and young stock and it always increases the milk flow. The white variety is best for pasture, as it stays green longer.

Cattle eat, and in fact, relish Sweet Clover even though some contend otherwise. The secret of success is to turn the cattle in early when the stand is from six to eight inches high and the plants succulent and tender.

First year Sweet Clover will furnish an abundance of fall pasturage when other fields are furnishing very little feed. During the first year grazing can start when the plants are about six inches high, although the less it is grazed the first year the better will be the grazing in the second year. If the weeds are bad, sometimes Sweet Clover must be cut during August. When this becomes necessary, the cutter bar should be set quite high, for there is no further growth of the main shoot after it has been cut, and dependence must be placed upon the lateral branches for pasturage or hay.

*Second Year
Pasturage*

The second year, Sweet Clover makes a quick, early growth and may be pastured earlier than any other plant. If the pasture is grazed reasonably close, there will be a constant supply of small tender shoots. Should the plants become coarse, the field can be clipped high to stimulate the growth of these shoots. This should not be done unless absolutely necessary as clipping second year Sweet Clover for any purpose is unsatisfactory. It is almost impossible to set a mowing machine high enough to clip Sweet Clover after early May without willing it.

Even if a seed or hay crop is wanted, pasturing may continue until the middle of June, as grazing really benefits the stand by causing the plants to stool and make a larger number of branches.

Recent trials, at the Ohio Station with Sweet Clover as a pasture for sheep, showed that the second year pasture has an unusually high carrying capacity for a limited time. A two acre plot with a medium to good stand furnished 81 grazing days to 51 head of yearling Shropshire and Merino ewes.

The Ohio Station is attempting to breed a late maturing Sweet Clover that will have a longer pasturing season the second year. These strains promise to prolong the pasturing season one to three weeks beyond that secured from the common varieties. This extra pasturage would come at a critical time when bluegrass usually produces little or no grazing and green feed is at a premium.

*Renovating
Old Pastures* Old pastures are often successfully improved by disking in the fall and sowing a few pounds of Sweet Clover during the winter. Not only is the amount of pasturage increased, but the grasses will be improved, owing to the addition of humus and nitrogen furnished by the Sweet Clover. The same plan may be fol-



lowed in the spring but not as successfully. At this time the seed should be drilled in. The Wisconsin Station has been quite successful in burning bluegrass pastures in the spring and then sowing in Sweet Clover.

For Hay

The best Sweet Clover hay is made in the fall of the year sown. This hay will be the equal of alfalfa in composition, palatability and feeding value and usually superior in protein content. It is cured about the same as alfalfa or red clover except that, being quite succulent, more time is required for drying.

Second year Sweet Clover is not well suited for hay as the growth becomes coarse and woody as it goes into bloom. Experiment Stations agree that Sweet Clover is too valuable for green manure or pasture the second year to use for making hay which at best will not be of very good quality. If a hay crop is harvested, the plants should be cut high enough to leave on the stubble, a sufficient number of buds and young branches as growth starts only from there.

Occasional cases of poisoning have occurred in feeding Sweet Clover hay. Some investigators believe that only spoiled hay is dangerous, while others believe that any of the hay will cause poisoning if fed continuously in large amounts. Apparently, there is little if any danger if other kinds of hay are used alternately with the Sweet Clover hay in one to two week intervals.

Soil Requirements and Preparation

Where It Will Grow

Almost the only limiting factor to the growing of Sweet Clover is the absence of lime. Lime is as necessary for Sweet Clover as for alfalfa. On poor land phosphate should be added. Observation of Sweet Clover, in places where it grows naturally, indicates what is necessary to be sure of a good stand. Organic mat-

ter or humus may not be present, but these spots contain lime and the ground is hard, which indicates that a firm seed bed should be prepared and lime applied if the soil is acid. If the soil is sweet, this plant will grow in water-logged soils nearly as well as alsike and far better than alfalfa or red clover.

Sweet Clover must be inoculated if good results are to be had, and the lack of this accounts for many failures. Even though it is sown in winter, the seed should be inoculated, as freezing weather will not injure the bacteria, nor will the sun's rays interfere because enough of the bacteria will stick to the under side when the seed is sown on top of the ground.

Seeding

When to Seed

The general practice has been to sow Sweet Clover in the spring in wheat or rye like red clover. However, there is evidence that late fall, winter, or very early spring sowing with unscarified or unhulled seed may give better results. One of the newer methods is to seed unhulled seed with fall grains. There is no danger of the seed sprouting if the unhulled seed is used.

NOTE:—Sweet Clover seed may be obtained in three forms namely: unhulled seed, hulled seed, or scarified. The last named kind is hulled seed that has been specially treated to scratch or break the hard seed coat. Such seed germinates more readily and evenly than unscarified seed and is ordinarily recommended for late spring or summer seeding. Scarified or unscarified hulled seed is usually sold at the same price while the unhulled seed is somewhat cheaper.

By seeding during fall or winter the action of moisture and frost will bury the seed and break the seed coat. In this way the seed is ready to sprout with the first warm weather, which is important as the plants grow best in cool moist weather.

Spring seeding with small grain has proven quite success-

ful. Early oats or barley is better than late oats as they do not shade the clover as much. Seeding alone should not be practiced in spring unless it is known from previous experience that weeds will not smother it. As explained before the seed should always be sown on a well prepared, firm seed bed.

In summer Sweet Clover may be seeded alone or in corn. Sometimes it is sown as late as August 15. On the whole summer seeding is not very favorable as the crop will not amount to very much during a dry season, although remarkable growths have sometimes been made during wet seasons. At this time the scarified seed should be sown.

*In
Mixtures*

Sometimes alsike, alfalfa or timothy is seeded with Sweet Clover. Alsike and timothy are useful on land which is not uniformly alkaline as these will occupy the spots where Sweet Clover fails. Four or five pounds of alsike and a little timothy is the usual acre seeding. For permanent pastures 4 pounds of bluegrass, 6 pounds of timothy and 8 pounds of Sweet Clover makes a good seeding. As the Sweet Clover dies out there will be a surprising growth of the grasses.

Inoculation

Do not fail to inoculate Sweet Clover unless you have grown it or alfalfa on the same field recently and the roots had nodules on them. Inoculation is simple and cheap and repays its cost many times. Besides the fact that it enables plants to take nitrogen from the air, it also insures a better stand. (See page 65).

*Rate of
Seeding*

10 or 12 pounds of hulled Sweet Clover is generally sown to the acre; 15 or 20 pounds of the unhulled seed should be used. For winter sowing some recommend broadcasting half the seed on frozen ground in February and the other half along in April after freezing weather has past. This increases the chances of having a full and uniform stand.

Moisture Requirement

Sweet Clover will not respond to moisture as quickly as red clover, as more moisture is needed for germination even when the seed has been scarified. For this reason growers are sometimes surprised to find that they have a poor stand of Sweet Clover while in a neighboring field sown with red clover at the same time, the growth has been entirely satisfactory. A lack of moisture just at the time of germination, or immediately after the young sprout is appearing, seems to affect Sweet Clover more seriously than any other clover. However, there is a very small percentage of failures in the seeding of Sweet Clover.

Harvesting and Threshing

Hay

As explained before only first year Sweet Clover should be made into hay. This can be cut about the time growth ceases which is usually in late September. Shortly before this time, numerous large buds are formed at the crown of the plant and these produce the next year's crop. After these are well formed the plants are ready for winter, and cutting of the year's growth will not kill them. It is not necessary to leave more than ordinary stubble when cutting a hay crop in fall of the first year. It is best to rake the hay into windrows after the plants are well wilted or put into very small cocks to complete the drying.

Seed Crop

When a seed crop is to be harvested, Sweet Clover should be pastured for a time during the second year, possibly until the middle of June. This will allow time for the seed to mature and at the same time keep the growth from getting too large.

The crop should be cut for seed when about three-fourths of the pods have turned dark, and only when damp from dew or rain, as the seeds shatter easily. When cut with a mower the swath should not be run over.

The mower is not as satisfactory for cutting Sweet Clover for seed as the binder, because with the former too much handling is necessary. The self-rake reaper is best, but a binder can be equipped at small expense for handling the clover economically and with small loss of seed.

Corn harvesters are sometimes used if the growth becomes too large to be cut with a binder. If the stand has been cut for hay or pastured, the plants are smaller and are harvested more easily, so in this case a binder works nicely. This facilities handling and makes it possible to use a huller, otherwise it is sometimes necessary first to thresh the coarse straw and then to run the seed through the huller.

Varieties of Sweet Clover

WHITE BIENNIAL—the most common variety. It has a strong root development and a leafy growth much like alfalfa in appearance. During the first year it often grows over two feet in height and usually approaches five to eight feet during the second year. As its growing season is two or three weeks longer than the yellow, it produces a larger top growth and so is preferred for hay the first year. It is also better for pasture, as it gives more grazing days.

YELLOW BIENNIAL—produces a smaller growth than the white. Its stems are finer and more branching and so it makes better hay the second year. It matures two weeks earlier and the seed is more easily harvested because of the smaller and shorter stems.

GRUNDY COUNTY—a variety of the biennial white sweet which probably is raised chiefly because it is easy to secure good yields of seed from it. It resembles the yellow variety in this respect and also in that it should not be sown for hay the first year or pasture the second, because of a small top growth and early maturity.

HUBAM—an annual variety of Sweet Clover. Used mostly by bee-keepers.



ALFALFA

The importance of Alfalfa as a feed and soil improvement crop cannot be questioned. It is a large yielder and will grow under many soil and climatic conditions. But, avoid all imported seed as well as unadapted native varieties.

TO get and maintain a stand of Alfalfa it is necessary to manure, lime, kill weeds, provide good drainage, sow adapted seed. This latter is most necessary and many failures attributed to other causes are really due to sowing varieties not winter hardy.

The federal seed staining laws protect you against unadapted imported seed. No such laws protect you against unadapted domestic seed, so even in purchasing American Alfalfa it is well to know in what state the seed was produced.

Established Alfalfa plants can hold their own against weeds, but young plants are sometimes smothered out by an aggressive stand of them. It is therefore necessary that you sow seed free from weeds, especially dodder and buck-horn, which cannot be removed from Alfalfa except by special machinery. The cost of preparing the land is the same whether good or poor seed is sown and the difference in the cost of the best and poor seed would never be over seventy-five cents or a dollar per acre. But, if the cheaper seed is sown, it may result in a total failure or at least reduce the value of the crop and raise the cost of harvest.

Utilizing Alfalfa

Whenever Alfalfa is raised it is possible to feed a balanced ration without buying the high priced concentrated feeds. Alfalfa will furnish the necessary amount of protein, the element which to a large extent determines the amount of beef and milk a given feed will produce. An average acre of this legume will furnish six times as much digestible protein as timothy and twice as much as red clover. As a general rule Alfalfa is more valuable for hay than for pasture. Sometimes it is successfully used as a forage crop as it is more or less permanent. It withstands pasturing fairly well if not grazed too early in the spring nor too late in fall.

For soil improvement alfalfa ranks high, as it is an excellent nitrogen gatherer and its deep roots will loosen the soil.

Alfalfa is useful in eradicating some of our worst weeds. Patches of Canada Thistle and Wild Morning Glory may be choked out with a thick stand. The Alfalfa makes a quicker start in the spring, and after cutting, than do these weeds which is the main reason for its success as a weed eradicator.

Soil Requirements and Preparation

**Feed
your soil**

The point has been well made that "growing alfalfa is often a choice between buying feeds for soil or buying feeds for livestock." Find out what your soil needs in the way of plant food by sending a sample to your experiment station. Well rotted manure is generally the best conditioner, and superphosphate is usually



necessary. If the seed is inoculated the plants will gather their own nitrogen from the air, and store some of this in their roots. Inoculation always encourages a more vigorous growth. Lime must be used on an acid soil. Lack of this has caused thousands of alfalfa failures and so it does not pay to take a chance. The best alfalfa soils are those with good surface and underground drainage.

*Need of
Lime*

There is nearly twice the amount of lime in the ash of alfalfa as there is in the ash of red clover, and seven times that in timothy. Lime is necessary for all legumes and especially so for alfalfa. Of the three forms of lime, the one most economical in your section should be used. 56 pounds of burnt lime or 74 pounds of hydrated lime is equivalent to 100 pounds of ground limestone. Probably not less than two tons of ground limestone per acre should be used, and more will not hurt. It is best to apply lime as long before sowing as possible, even a year in advance.

Drainage

All plants require air in contact with the roots. If there is too much water in the soil the air is reduced and root development retarded. A lesser top growth follows. Drainage takes off surplus water and admits air, causing circulation. Almost any wet soil, if properly drained, will raise alfalfa. The tile should be put in as deep as may be practicable.

*Winter
Killing*

Good drainage and plenty of humus is the best insurance against winter killing. Late summer seeding should be avoided as well as late fall cutting and pasturing. A new stand of hardy Alfalfa will generally weather the worst of winters even when the old stands of the same strain are practically killed out. Because of this, new seedings of Alfalfa as a part of the regular farm rotation have become a method of reducing the loss from winter killing.

*Seed
Bed*

Alfalfa wants a firm but well prepared seed bed with the surface lumps broken up. Fall plowing is advisable, especially with the heavier soils, as it gives the land time to settle, and makes it possible to apply lime during winter. A cultivated crop, such as corn, should be grown on the land the preceding season, if possible, to avoid weed trouble and also interference by grasses. If this has been done it is not necessary to plow before seeding.

Inoculation

Inoculation increases the yield of this legume, and also increases the protein content of the forage. The Illinois Station found that, as an average, 70 pounds of protein was added to a ton of hay by inoculating the seed. Inoculation will not only insure a greater yield but it will also increase the chances for a good stand, and store a large quantity of nitrogen in the roots at no expense. The cost is very small and the returns large.

Seeding

*When to
Seed*

In sections having approximately the same climate as Ohio, Alfalfa may be seeded in early spring or mid-summer. Spring seedings are practically always made with a nurse crop, such as barley or early oats, about the last of April on the first of May.

The grain may be cut for hay or allowed to mature if there is no danger of smothering the young Alfalfa plants. Although summer seeding has been quite popular in the past, in some sections spring seeding is much better because of the dry condition of soils in late summer. Summer seedings do not require a nurse crop but the ground should be put through a careful weed killing cultivation. Early July seems the surest planting time. Sometimes Alfalfa is seeded in corn at the last cultivation. This practice is not generally recommended because it so often results in complete failure.



Seeding

The amount of Alfalfa seed required per acre varies according to the fertility of the soil, quality of the seed, and method of planting. The usual seeding is twelve to fifteen pounds per acre. Alfalfa seed should be sown shallow; on heavy soils it is sometimes best to broadcast the seed and then cover it by a light rolling or harrowing. Drilled seed should be harrowed lightly to smooth out furrows left by the drill, as otherwise a heavy rain may bury the plants.

Harvesting

When to Cut

In spite of the fact that the advice has always been to cut Alfalfa when the little shoots start, this is probably not the best indicator. Instead, it would seem that the best stage to cut Alfalfa is when the vegetative growth slows up, which ordinarily occurs just before full bloom. At this time there is usually a slight yellowing of the field.

The number of cuttings per year will depend upon climatic factors but experiments at the Ohio State University Farm indicate three cuttings as best for all except possibly northern latitudes. This rate of cutting gave more hay of a better quality, and strengthened the stand against winter-killing.

Curing the Hay

The leaves of Alfalfa contain about twice as much protein as the stems and in the bud stage this is around twenty-eight per cent. Because of this, in making hay, every effort should be exerted to save the leaves. The greatest quantity of hay is harvested during the third or fourth season, as after this weeds, grass, etc., weaken the stand and the yield decreases.



Alfalfa should be raked into windrows and then put into cocks until after the leaves have wilted and the hay cured. A heavy crop may be tedded. The crop may be stacked or mowed while the stems are quite tough or flexible. Of course, any kind of hay, including Alfalfa, should not be exposed to the hot sun any longer than necessary. Too long exposure bleaches the leaves of Alfalfa and causes them to become brittle and fall off. Moreover, if the leaves have been burnt by the sun, they will not evaporate the water from the stems, and the hay will cure slowly and unevenly. Curing through the action of air and wind is best; therefore Alfalfa should be cured in cocks, rather than in the swath.

I have been using your field seeds for the past fifteen years, and think that they are all you claim for them as I have never missed getting a crop of clover in the fifteen years.

C. L. BEATTY,
Clinton, Allegheny Co., Penn.

You will get my order next month. I have bought from _____ for the last two years but when 1927 seeding got knee high last spring I spent two days pulling mustard and other noxious weeds, and so you will hear from me about January 25.

JAMES S. EASTLICK,
Jamestown, Mercer Co., Penn.

I have always been pleased with your grass seed. I find it pure and clean and reasonable in price.

Yours respectfully,

LEWIS E. WARNER,
Auburn, Ritchie Co., West. Va.



GRIMM ALFALFA

We Guarantee Our Grimm Not to Winter-Kill

BACK in 1919 we adopted the policy of guaranteeing our Grimm Alfalfa not to winter-kill. This is the eleventh time we have renewed this guarantee and we are glad to do it, as our confidence in genuine Grimm is just as firm as ever. This warranty is designed to give growers the necessary confidence, not only in our Grimm, but in the Grimm strain of Alfalfa as a safe and profitable crop.

Our Guarantee

To guarantee that the seed will produce a satisfactory growth is hardly possible because too many things can happen before the Alfalfa becomes established. However, if seed is sown early enough so that a growth of six to eight inches is realized, before the plants become dormant, we will willingly and cheerfully replace the seed if the plants do not carry through winter.

Grimm Alfalfa must, of course, be planted on ground where drainage and other conditions are favorable. Owing to the fact that dry weather may delay germination, so that the crop would not get a good start before winter, we believe that north of the Ohio River Alfalfa should not be planted later than August 1.

Winter Killing

The proof of genuineness is hardiness. This is the only positive proof. Grimm seems to be more drought resistant than ordinary Alfalfa and many farmers believe that on an average Grimm will produce more hay than any other strain. This contention has been proven by experiments at the Ohio Station. Different winter conditions cause Alfalfa to kill. A rainy fall prevents the plants from becoming dormant early so that the plants are not sufficiently prepared for winter. Alternate freezing and



thawing in clay or in humus-poor soil will break off the roots. Sheet ice sometimes kills Alfalfa. Grimm Alfalfa has the qualifications that enable it to withstand these conditions better than any other variety.

Reasons for Hardiness

It is not known just why Grimm is more hardy than any other Alfalfa. No doubt this is due in part to the presence of yellow flowered Alfalfa in its ancestry and also to the process of natural selection which took place under the severe climatic conditions to which it was subjected for a long period of years in Minnesota. It was in this state that the seed was introduced from Germany by Wendelin Grimm in 1857. Another reason for its hardiness is its low set crown, which affords protection to the most tender part of the plant.

Identifying

It is very difficult to distinguish Grimm from other Alfalfa. The seeds of both are almost exactly alike. There is not much difference between the plants except that there is a greater diversity of forms, upright and decumbent individuals often occurring side by side. When in full bloom Grimm shows a higher percentage of mixed or variegated flowers. Even though some contend otherwise, Grimm does not have a much more branching root system than ordinary Alfalfa, so it is impossible to identify Grimm in this manner. The seed of Grimm Alfalfa has a definite market value like any other standard seed, and so Grimm at a very low price could not be true to name and would be an unwise buy.

Danger of Weeds

In seed producing sections Grimm is grown for seed almost exclusively, owing to the extra price which the seed brings. The weeds in an Alfalfa field tend to increase more rapidly when the stand is allowed to remain for seed each year than when the field is mown regularly for hay. For this reason Grimm seed should be purchased carefully.

THE TRUE CLOVERS

For the first time in many years, the country produced a normal crop of clover seed. This will enable us to furnish seed of excellent quality at prices lower than have prevailed for some years.

Red Clover

Until recent years Red Clover had been our most important soil-building crop. However, of late, failures with it have become quite common and so the crop is losing some of its importance. This season there is a plentiful supply of Ohio, Indiana and Michigan grown Red Clover which has proven to be the hardiest and freest from disease of any clover.

Why Does Red Clover Fail?

Authorities tell us Red Clover fails because our soils are less fertile than formerly, and that they are also acid. These soil conditions may be improved. Most soils need lime and phosphate. In some cases there is a deficiency of humus and organic matter, which with poor drainage, results in winter-killing. Find out what your soil needs before attempting to raise Red Clover. Sometimes, on poor soils, plowing under a heavy green manure crop such as sweet clover or soybeans will pave the way for Red Clover. A top dressing of farm manure is very effective especially on soils well supplied with lime. Inoculation is beneficial as this will introduce the proper bacteria so the plants can gather nitrogen from the air.

Sowing unadapted seed has been the cause of many Red Clover failures. Most of the imported seed is unsafe as is that grown in some of our own western states. Oregon grown seed has proven to be entirely unfit for use in the central and eastern states, in fact it is no more desirable than the Italian seed.

Diseases have played havoc with Red Clover in some sections. Anthracnose has been especially destructive throughout West Virginia, Kentucky, Maryland, Tennessee and Virginia.

Cultural Practices

Best results are usually obtained from spring sowing, and for greatest germination the seed should be drilled in. In some sections of the country, where spring sowing fails, late summer seeding has proved advisable. This is especially true south of the Ohio River. The plants escape the hot, dry midsummer, which often kills or weakens them.

It is often the practice to cut Red Clover too late. If the blooms begin to ripen the plant is injured. If cut when just in bloom the second crop will be heavier, there will be no danger of harming the plants, and the hay will be more palatable. After being cut, Red Clover will not stand as much moisture as either alfalfa or soybeans. Thus it pays to cure it and get it into the mow or stack as soon as possible. If cut in the afternoon when the plants contain less moisture, the hay can be tedded the next morning, windrowed, shocked and put into the mow the same day.

Red Clover matures about the same time as some of the worst weeds, as, for instance, Buckhorn, Wild Carrot, Sorrel and Dodder. For this reason it is very difficult to find Red Clover free from weeds.

We give special attention to Red Clover because we sell more of it than of any other seed. It has always been our policy to supply seed as free from weed seeds and waste matter as is possible to furnish.



Mammoth Clover

Warranted True to Name

This clover, also called English, Sapling, and Pea Vine Clover, like red, is a biennial; but, where soil and climate are particularly favorable, or where prevented from producing seed, it is likely to show a perennial tendency.

The very heavy growth usually smothers out most of the weeds and as a result we can always furnish Mammoth that is free from weed seeds. This clover is supposed to be less subject to diseases than red clover.

For Hay and Seed

On poor soils Mammoth makes more desirable hay than on good soils because the growth is not so rank. It is especially superior to red clover on sandy soils, and excels it as a green manure crop on account of the large growth. Mammoth makes hay about three weeks later than red, so it is much better for sowing with timothy or red top, as red clover is overripe at the proper time for harvesting either of these. While the hay is coarser than red clover it has the advantage of ripening later in the summer when there is less danger of rain.

If a seed crop is to be harvested the clover should be pastured until about the first of June. However, if the season is especially dry, care must be used in pasturing as the plants may not make enough after-growth to produce a large seed crop. On very poor soils it may be advisable not to pasture at all. Instead of pasturing Mammoth some roll it just when it is starting to head. This keeps down the heavy growth and makes the seed crop a little earlier. Mammoth makes a much surer crop of seed than red, and matures about three weeks earlier.

An advantage of Mammoth over red clover is that the seed crop of the former is made between the first and second bloom of medium red and for that reason usually escapes the attacks of flies and insects.



Identifying the Seed

The seeds of Mammoth and red clover are so nearly alike that they cannot be distinguished. This likeness has resulted in much annoyance for the grower. We formerly received dozens of letters each year asking how we knew our Mammoth was true to name, most of the writers stating that they had more than once sowed Mammoth only to reap a crop of red.

This seemed to be the common experience all over the country. For this reason we guarantee the genuineness of any Mammoth Clover seed purchased from us, and will refund the full purchase price of any which does not prove to be genuine.

Alsike

At one time Alsike was thought to be a hybrid between white and red clover on account of its appearance and habit of growth. Now, however, it is considered to be a distinct species.

While not strictly a perennial, Alsike usually remains in the ground for several years as enough of the heads escape mowing and the grazing of stock to do much toward reseeding. It is particularly adapted to wet soils, sometimes doing well in standing water. Alsike will grow much better on acid soils than red clover and will also resist winter-killing to a greater extent.

The diseases that attack red clover do not affect it at all.

Alsike gathers nitrogen from the air the same as red clover and other legumes, and would be as valuable in the rotation as a soil builder except for its smaller root and stem growth.



In Hay Mixtures

For growing with timothy, Alsike is preferred by some to red clover, their contention being that these two ripen together and the timothy is not crowded by Alsike as it is by red clover. However, many growers claim that Alsike is ready for hay three weeks before the timothy and so the two should not be grown together. Quite often it is sown with red clover since it interferes but little with the growth of the latter, and should the red clover fail to grow, or be killed, the Alsike will probably take its place. The spreading roots of Alsike will keep red clover from "heaving." As there are 700,000 Alsike seeds to a pound, and 250,000 in a pound of red clover, it takes much less of the former to sow an acre, and less Alsike should be used when the two are to be sown together. Alsike is also a desirable mixture with alfalfa on doubtful soils to insure against failure.

Quite often we have Alsike seed with timothy or white clover in it which we can sell at a special price.

Except where grown for seed it is usually best to sow some other seed with Alsike, such as timothy, orchard grass, red clover, or bluegrass. A good hay mixture is three parts timothy, two parts red clover, and one part Alsike. South of the Ohio River, Alsike, redtop and orchard grass make a desirable mixture for a semi-permanent pasture. As the seed is so small it should be covered lightly, and 6 to 8 pounds per acre is sufficient.

Avoid Weedy Seed

Probably because of acid soil, Canada Thistle, Sorrel and Buckhorn infest many of the sections where Alsike is raised for seed, so it is well to look for these weeds when testing samples. They cannot be entirely removed in cleaning as many of them are the same size as Alsike. This is especially true of Canada Thistle.

Owing to its smaller size Alsike is hard to clean, but by using care in buying we are always able to furnish seed that is practically weedless.



Crimson Clover

Crimson Clover is said to be a native of southern Europe. It was introduced into Chester County, Pennsylvania, in 1820, but its distribution was quite limited until 1880. Crimson Clover is a winter annual, that is, being sown in late summer it goes through the winter in a green state, matures its seed and dies in the spring. It will seldom withstand the winters north of the 40th parallel. The fact that it is imported would indicate that the seed generally contains a lot of noxious weeds. This is usually the case and so a careful examination should be made before buying. Use our test.

White Clover

White Clover is usually called White Dutch to distinguish it from white sweet clover. As it grows almost anywhere everyone is thoroughly familiar with it. Many alsike fields contain White Clover, and when the seed is harvested the two cannot be separated. Sometimes we have this mixed seed at prices lower than when the two seeds are bought separately.

Japan Clover

For years Japan Clover, or Lespedeza, has proven itself a valuable plant in the South. Its possibilities in the northern states are being realized, as now it is grown in southern Pennsylvania, Ohio, Indiana and New Jersey. It will grow on almost any type of soil, and even thrives on dry hillsides and acid soils.

Lespedeza is an annual and far enough south will reseed itself if not grazed too closely. It is used mostly as a pasture crop, since it will renew old, thin pastures and affords a good forage during July and August when other feed is scarce.



Early spring sowing is the best in a winter grain or with some other nurse crop, or it can be sown in mixtures. If seeded alone, about 25 pounds per acre should be used. The seed comes unhulled and ordinarily contains considerable waste matter. Its use north of the Ohio River is not recommended except in a small amount on permanent pastures.

Korean Lespedeza is a new variety introduced into this country about 1922. It matures earlier than the common and produces a larger growth.

See Freight Paid offer page 71.

Scott's Seeds are free from weeds.

I received the 28 pounds of seed you sent me to cover loss of shipment said loss caused by carelessness of railroad employees and not by yourselves.

I wish to thank you for the excellent quality of seed furnished also for your business courtesy to me. I assure you that everything was very satisfactory.

Mr. N. L. SCHEIN,
Williamsport, Pickaway Co., Ohio.

OTHER LEGUMES

Hairy Vetch

We Supply Home Grown Vetch Only

Of the many kinds of Vetch, but two are of agricultural importance in this country, namely, Hairy Vetch and Common Vetch. In the latter there are both winter and spring strains but only the spring strain is used except in the states south of Tennessee. This spring Vetch is an annual and it is used very little except on the Pacific Coast.

Russian and Sand are other names for Hairy Vetch, a winter annual, which is our best leguminous winter cover crop. It lives through the most severe winters, thrives well in sandy soils, and withstands drought better than other legumes. When inoculated the plant is an excellent nitrogen gatherer. In feeding value, as hay or pasture, it is equal to Red Clover.

Cultivation

It is advisable to sow a small grain with Vetch to support the weak stemmed vines, as they grow better off the ground. Rye is usually seeded with it, using a grain drill and sowing 20 to 30 pounds of Vetch with 3 to 5 pecks of rye. The more Vetch seed used the greater will be the soil improvement. The seed should be sown in August or early September, or it may be seeded alone in the spring for pasture or with oats or barley. In either case it will make an excellent summer pasture.



Harvesting

The hay is easily cut with a mowing machine or pea harvester. If it is to be stored the crop should be cut when the pods are about half formed, as then it can be easily and quickly cured. Sometimes the crop is fed green, and if this is to be done it should be cut when the plants are in full bloom. It may be grazed for a short period in spring without reducing the hay crop a great deal. Domestic Hairy Vetch has a higher percentage of germination than the imported and is usually weed free.

Canada Field Peas

Field Peas are usually spoken of as Canada Field Peas, the name having been given when the plant was comparatively unknown and the seed mainly imported from Canada. However, only a few varieties originated in that country.

Being a legume, the crop is a soil improver and furnishes a ration rich in protein. The peas can be sown for soiling and fodder and for green manure. They are usually sown with oats, about one bushel of each, thoroughly mixed, per acre. This combination makes a very desirable hay or soiling crop, the yield being quite large.

Unlike cowpeas they should be sown as early as possible in the spring, and do best farther north than Central Ohio.

One bushel of Field Peas, one bushel of oats, four pounds of dwarf Essex rape, and eight pounds of sweet clover make excellent hog pasture that can be sown in the spring, the pigs being turned in when the oats and peas are about eight inches high. The clover may be omitted. Inoculate Field Peas for best results.

HAY AND PASTURE GRASSES

Timothy

Timothy was first brought into this country from England by Timothy Hanson, of Maryland, in 1720. It is distinctly a grass for hay rather than pasture, as it does not take kindly to trampling and close grazing. It is our hardest and best known grass and is a part of all mixtures.

The facts concerning seeding, harvesting, etc., are so well known that it is unnecessary to enumerate them.

Often Timothy seed contains a considerable amount of sorrel owing to the fact that both grow on acid soil. It is well to be on the lookout for this and also for Canada thistle, which is not easy to identify in Timothy seed. In Timothy seed you will nearly always find a small amount of Alsike, and quite often grasshopper specks. It is not possible to remove entirely either of these, and while they hurt the looks of seed, they make no difference in the quality, and should not be confused with black plantain which is somewhat triangular and flat.

One peck is the amount usually sown per acre, or if clover is to be sown in the spring, a bushel to six acres. A satisfactory mixture is 6 pounds Timothy, 4 pounds red and 2 pounds alsike.

Kentucky Bluegrass

This variety of grass is native both to Europe and to North America, and shares with two or three other similar species the rank of greatest American pasture grass. Authorities are of the opinion that it is grown more or less in every state of the Union. It makes the best sod of any of our grasses and does fairly well on a wide range of soils,



although better adapted to clay than to sandy loam. It is a very nutritious pasture grass, but has little value for hay. The fact that it is both an early spring and late fall grower makes it valuable for grazing at both ends of the season. Kentucky Blue Grass constitutes a part of practically every lawn and pasture mixture.

Orchard Grass

Orchard Grass, known as Cocksfoot in England, is a native of Europe. Its American name is due to the fact that it is successfully grown in partially shaded places.

This grass will stand more drought than Kentucky bluegrass, but it is not especially adapted to dry land conditions. It starts very early in the spring and grows rapidly so that it is valuable in a pasture mixture. It does not permit an even sod, as it is inclined to grow in tufts or bunches. Although of high nutritive value, Orchard Grass is not relished by stock as much as bluegrass or redtop. It thrives best on rich, well-drained loam, and makes a good growth in shady places. 28 pounds is the amount usually sown per acre.

Our test should be used, as it is seldom possible to get Orchard Grass that does not contain a considerable amount of dock and sorrel and quite often buckhorn, all noxious weeds.

Redtop

Redtop belongs to a family of grasses that is very widely distributed over the globe. It is a perennial which ranges in growth from a few inches to three or four feet according to the conditions of soil and climate. Growth starts later in the spring than Kentucky bluegrass, is slower and maturity is later. Redtop is valuable for pasture and hay, but does not equal timothy for the latter. While adapted to a great variety of soils it does especially well on wet bottoms and should always be included in mixtures for such land.

About 15 pounds of clean Redtop should be sown per acre.



Miscellaneous Grasses

Besides the grasses already mentioned, we are able to offer such varieties as are in general demand: Meadow Fescue, Canada Blue Grass, Rye Grass, and all imported fancy grasses.

Pasture Mixtures

A mixture gives a longer period for grazing, furnishes a greater variety, yields a crop richer in protein, and makes a better balanced ration, than would the grasses composing the mixture if sown separately. But it does not pay to sow in a mixture any grass that will not do well alone.

In choosing the grasses to go into the mixture such varieties should be selected that the good qualities of one will balance points in which the other is deficient. For example, the grass that forms roots on the surface is not desirable from the standpoint of fertility; another may send its roots fairly deep, but not be as suitable for pasture grass as the other. The two make a combination well adapted to grazing and maintaining fertility. Pasture mixture grasses should be selected with respect to their periods of growth so that grazing may be done through the longest possible period.

A small amount of various clovers should be included in a Pasture Mixture, as legumes not only feed the grasses by pumping plant food from great depths to the surface, but also supply them with nitrogen drawn from the air, and, no doubt, greatly increase the protein content of the grasses. A small amount of Alfalfa will do much towards getting the soil inoculated. White Clover will grow where nothing else will and Alsike does well in wet places. Due consideration must be given to the fact that the kinds of grasses that should be used depend upon the locality. Even in a single field, parts will be found that are adapted to grasses that will not thrive in the rest of the field.



Sow pasture mixtures at the rate of 20 to 50 pounds per acre.

Annual pasture mixtures have become popular. More energy value from the same acreage can be procured when these are used as soiling crops. Canada Field Peas and Oats probably take first rank. Rye and Barley as well as dwarf Essex Rape are also used. Any of these can be added as desired to the following mixtures which we recommend:

- No. 1. 8 pecks Oats, 4 pecks Field Peas.
- No. 2. 4 pecks Oats, 3 pecks Barley, 3 pecks Rye.
- No. 3. 6 pecks Oats, 5 pounds Sweet Clover,
6 pounds Timothy, 5 pounds Alsike Clover.

Meadow Mixtures

In contrast to pasture mixtures, meadow mixtures should contain grasses that mature at about the same date.

For reasons already stated it is more profitable to sow a mixture of several grasses, including clovers, for hay rather than to sow one kind alone, for then the roots fully occupy the ground to a considerable depth, each variety getting its food from a different level, the legumes acting as feeders for the grasses.

We will be glad to suggest meadow or pasture mixtures for special soil and climatic conditions.

Lawn Seed

We are entering upon an age of good lawns. In the past anything that was green seemed to answer the purpose, but now we look at the matter differently.

To make and maintain a beautiful lawn is not the easiest thing in the world, but our booklet, "The Seeding and Care of Lawns," tells how to get the most out of your efforts and expense. We will gladly send you a copy on request.

It is "good lawn insurance" to sow Scott's Lawn Seed. We do not believe there is a purer or better mixture on the market. Considering that fact you can't make a more economical purchase. A pound will go twice as far as a pound of ordinary lawn seed.



FORAGE AND CATCH CROPS

Sudan Grass

Sudan Grass is a quick-growing annual which is becoming increasingly popular because it will thrive on almost any kind of ground, will withstand drought, and gives abundant yields. Throughout the corn belt it is probably the most desirable catch crop of the grass family, as it makes good hay, pasture, ensilage and soiling. Its feed value is fully equal to that of Timothy and it is relished by all stock.

The usual seeding time is from two weeks after corn planting until the first week in July. For hay or pasture the seed may be broadcasted or drilled at the rate of 15 to 20 pounds per acre. Two crops of hay can sometimes be cut, the first one about sixty to eighty days after seeding, as the first heads appear, and the second forty-five days later. This hay is easily cured in cocks.

As a pasture plant Sudan furnishes plenty of green, rich forage during dry weather. It can be grazed as soon as the plants are two feet high, and if practicable the field may be divided in half and pastured alternately. An acre should support one to three cows for two or three months.

The Millets

The term Millet takes in a large group of quick growing annual forage grasses. The Foxtail group is most extensively used and cultivated in America and consists of the Golden, Hungarian and Common varieties.



Golden Millet, sometimes called German, is most largely used, especially in the West, and most of the seed comes from that section. Sow 35 to 50 pounds per acre about two or three weeks after corn planting. The best Golden Millet is cultivated for seed in Tennessee.

Hungarian Millet is smaller and matures earlier than the Golden. The hay is somewhat more desirable as it does not get as coarse. Seed the same as Golden.

Dwarf Essex Rape

Dwarf Essex Rape is valuable as pasture for cattle, sheep and for hogs especially. It grows from one and one-half to four feet high and lasts longer in fall than other pasture crops. The cost of sowing is small, as only 4 or 5 pounds per acre are required. In the north it may be sown any-time from early spring to mid-summer.

I received the seed in due time. If you will refer to your record of last year you will find that I ordered seed from you. I never sow any other because I think yours is better. I always recommend Scott's Seeds. Yours with best wishes.

J. S. DICKEY,
North Manchester, Wabash Co., Ind.

Our transactions were entirely satisfactory so far as I am concerned, but we have moved into town. I am sorry that I did not buy more of my seeds from you, as I would not have bought so many noxious weed seeds.

ALONZO BURNS,
Bethseda, Belmont Co., Ohio



GRAINS

Corn

The best insurance against loss of labor in growing Corn is to be certain that good seed is planted. A good crop was never produced from poor seed, as a maximum yield can be expected only when there are no weak or missing stalks. To plant one bad ear means about 900 weak, barren, or missing stalks to the acre. Cultivation, fertility and drainage of the soil affect the production of Corn, but the crop depends first upon the selection of seed.

The necessity of cultivating Corn is appreciated by everyone but the proper practices are not always known. As a three year average, the Ohio Station found two or three inch cultivation to be best, as either deeper or more shallow working reduces the yield of both grain and stover considerably. By the time the plants are two or three feet high the roots have spread from hill to hill and working the soil deep at this time may injure the stand.

Varieties

At the time this guide is published it is impossible for us to know just what varieties of Corn we will have to offer, other than those listed.

The practice of treating Seed Corn with a disinfectant has proven to be very worth while. We can furnish the Du Bay product for this purpose at the regular retail price. As this material is classed as a poison it cannot be sent by mail but we can send it along with the seed.



LITTLE COB YELLOW DENT. A grower in a nearby county developed this variety over 40 years ago. We have sold a great deal of it and have found that it has given better satisfaction than any other variety that we have ever listed. Owing to the characteristic small cob we named it Little Cob and are selling it in increasing quantities every year. It is a carefully selected, high bred Corn, and as we sometimes find a single ear of Flint in a field of it, we suppose there was a mixture of Flint in the original selection. This may account for its very small white cob and the fact that it matures early and thoroughly.

For a quick ripening, all around Corn we know of none that will give better satisfaction. We recommend it for early ensilage, as the stalk contains more leaves than other varieties. If you are not entirely satisfied with the Corn you are growing we suggest that you give this variety a trial. It matures in about 110 days.

We have discontinued selling late varieties. The percentage of failures is too great. We believe there is no variety that will surpass Little Cob as a general all round Corn.

WOODBURN. A yellow dent variety. One of the best grain yielders at the Ohio Station.

EARLY CLARAGE. This yellow Corn matures in about 100 days and never fails to ripen. The ears are fair size. It is a very satisfactory yielder.

McGINNIS. An early white cap variety maturing in about 110 days.

ENSILAGE CORN. We have found that Red Cob, Eureka and Blue Ridge are the most popular varieties for ensilage. The Eureka and Blue Ridge are the same Corn as far as production of ears and stalks is concerned. The former seems to be a selection of the Eureka with a wider and larger grain.



Wheat

Owing to the fact that a threshing machine goes from one farm to another always carrying at least a few grains from each place, it has been extremely difficult to supply Wheat that is unmixed, but by specializing in the excellent varieties developed by the Ohio Station, we are able to furnish seed that is practically pure. Two varieties, Trumbull and Fulhio, have become very popular in states other than Ohio, owing to the fact that they are both good milling wheats and large yielders.

Wheat should be sown two bushels to the acre, as it has been shown through many tests that where this amount is used more profit is realized than where six, seven or nine pecks are sown. There is absolutely nothing in the claim that a peck or half-bushel of certain varieties is enough for an acre.

TRUMBULL. This beardless variety is a selection from Fultz. It is smooth, much liked by millers; and, what is more interesting to the grower, a large producer. Probably more of it is sold in Ohio and neighboring states than any other kind.

FULHIO. A beardless selection of Fultz introduced by the Ohio Station. While not as well known as Trumbull, it yields fully as well and is becoming popular. On a ten-year average at the Ohio Station this variety produced the second highest yield, giving $38\frac{1}{2}$ bushels to the acre.

NIGGER. A bearded, heavy yielding variety. The grains are larger, plumper and harder than most soft winter kinds. We cannot recommend it too highly.

SPRING WHEAT. This is not grown extensively in the central states but if wanted we can usually supply the Marquis variety.



Oats

While we list below the Oats that we ordinarily can supply in any quantities, at the time of writing this it is impossible to tell what varieties we will have to offer in addition to those listed.

SCOTTISH CHIEF. For a number of years we have sold these Oats and, as they are produced plentifully in this county, we can sell them at a very satisfactory price. They come to our elevator in large quantities and we select the best crops for seed. They originated from a car of Canadian Oats which we distributed ten years ago. The Oats are heavy and plump, and large producers.

SIXTY DAY. Not only is this the earliest variety of Oats, but it is also one of the largest yielders. Owing to its extreme earliness it will make a crop where later varieties will fall. The straw is short and does not lodge, which makes it particularly desirable for a nurse crop. It has good feed value for the reason that the hull is thin and light. It is one of the best varieties for soiling in connection with Field Peas.

MIAMI. This is what the Ohio Station says: "Formerly known as Ohio No. 6203. Originated as a pure line selection from the Siberian variety in 1906. Spikelets 2-3 grained, kernels white, awns weak, straw medium stiff. Average height, 40 inches; tillering power good; medium maturity. Has the highest ten-year average yield of any variety on Experiment Station farm at Wooster."

CANADIAN. It will no doubt be necessary to offer Canadian or western grown oats, owing to an inferior crop in the central states. We have sold these oats for several years and they have always been good yielders.



Rye

ROSEN variety has entirely replaced the old White Rye. It produces less straw and a larger yield of grain.

Barley

ODERBRUCKER is probably the best known and largest yielding bearded Barley. We no longer try to supply the beardless varieties, as they are all small yielders and usually badly mixed. The new barbless strains, such as Velvet, are replacing both the bearded and beardless.

VELVET is a new variety developed by the Minnesota Station. It is bearded but has smooth awns so that it is as satisfactory to handle as the beardless. It has a white kernel and yields as well as the ordinary bearded varieties. This type of Barley should eventually take the place of all other kinds.

Buckwheat

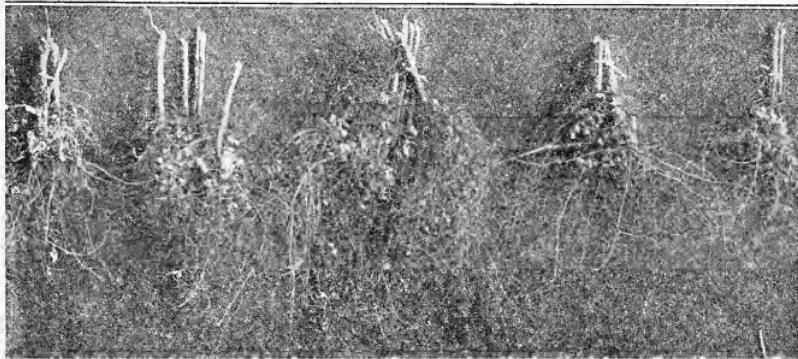
The value of Buckwheat as a catch crop is due to the fact that it matures in about 70 days and will ripen in the cool weather of early fall. It grows best on fertile soil but will give fair yields on soils too poor for other crops.

Of the several varieties of Buckwheat the Japanese is the most popular.

LEGUME INOCULATION

HERE is no question of the value of legumes on the farm. The problem is to utilize them to the greatest possible extent and make them "board themselves and pay for the privilege." If this is done legumes will have a beneficial effect upon the soil by, adding organic matter, making plant food available as the plant materials decay, and adding nitrogen by the activities of the nodule organisms.

To utilize legumes to the fullest extent it is absolutely necessary to provide the proper inoculation. What is inoculation? It is the bringing together of the legume plant and the bacteria which cause nodule production. These nodules (see illustration below) are tubercle-like swellings on the roots which house millions of bacteria. These bacteria are able to take nitrogen from the air and feed it to the host plant. In this way nitrogen is supplied to the crop at



Good nodule formation on soybean roots. Bacteria living in these nodules gather free nitrogen from the air. (Courtesy Iowa Experiment Station and International Harvester Co.)



no cost—the real advantage of inoculation. Only inoculated legumes can do this, as no other plants have this ability nor do uninoculated legumes. The big problem on our farms today is to return nitrogen to the soil at the least possible expense. Some farmers have waited for the development of cheaper nitrates—others have located nitrogen factories on their own farms. They grow more inoculated legumes.

In addition to adding nitrogen, inoculation often has striking immediate effects upon the yield and quality of the crop. The Wisconsin Station has found for example, that the weight of inoculated Alfalfa was considerably greater than that of uninoculated Alfalfa. Besides, the quality was better and the feeding value increased by a higher protein content. Experiments have proven that inoculated seed is much more apt to produce a good stand than uninoculated seed.

Plants become inoculated either by the proper bacteria being in the soil, or by treating the seed with a good commercial culture such as Scott's Guaranteed Bacteria. Self-inoculation cannot be relied upon unless the same crop has been grown on the same land before and nodules were developed on the roots. This is not entirely safe as the organisms die out rapidly, especially in soils that tend to be acid.

To fully appreciate the value of inoculating legumes, we suggest the reading of our booklet, *Friendly Workers of the Soil*. This tells the whole story clearly and completely in ten lessons. This book has been used by more than 500 instructors in Agriculture, who are well pleased with it because of the clear and concise manner in which the subject is presented.



SCOTT'S Guaranteed Bacteria

In buying inoculating materials, there are three factors worthy of the greatest consideration. These are: ease of application, economy and guaranteed results.

Scott's Bacteria is prepared so that it can be applied easily to the seed. The cost of the bushel sizes of Scott's Bacteria is small and special prices on five bushel sizes makes inoculation costs almost negligible. We guarantee that Scott's Bacteria will produce nodules and be satisfactory in every way. If it fails to please you we will cheerfully refund the purchase price.

Culture Groups

Bacteria that produce nodules on one legume will not produce them on all legumes. However, some bacteria will inoculate more than one legume so we are listing here the different ones which are inoculated with the same strain:

- Group 1. Alfalfa and Sweet Clover.
- Group 2. Red, Mammoth, Crimson, Alsike.
- Group 3. Vetches, Field and Garden Peas.
- Group 4. Field and Garden Beans.
- Group 5. Cowpeas, Japan Clover, Lima Beans.
- Group 6. Soybeans.



HOW TO ORDER

Order Early. It always pays. Prices may be no higher, but sometimes it is impossible to get the best seed late in the season.

Order Blank. Use it please. When shipping point is different from your mail address give county under each name.

Change in Price

All seed must be sold on the basis of market quotations. It is for this reason that our prices are for prompt acceptance. A slight fluctuation, however, does not affect them. We always accept orders at the prices quoted if at all possible, but we must follow any material changes whether they are up or down.

Terms

We will ask you to kindly send a full remittance with your order, a personal check, bank draft or money order is acceptable. If you are not sure of the exact cost of your seed, just send a blank check, protecting yourself by writing in, "Not good for over \$.....," and we will fill in the correct amount.

If you prefer, we can send your seed draft attached to bill of lading. In this way you can get the seed from your freight agent by paying for it at your bank.



Bags

Cotton bags are still priced low. By allowing for them in your order you can lay in a supply at a reasonable cost. They are sold to you at exactly what we pay for them. It is not possible to furnish bags free without adding to the cost of the seed.

If you have a surplus of sacks you may send them and we'll be glad to use them for your order. Be sure to mark your name on them so we know who sent them and also tell us *in the order that you are sending bags.*

Delivery

Our central location enables us to guarantee prompt delivery of your orders. We are situated in the central section of Ohio, which is served by a net work of the largest and most important railroads and electric lines. Two of these steam railroads serve Marysville, while the others are accessible with only one transfer. These two lines are the Big Four and New York Central.

Marysville is the county seat of Union County, located in the west central section of Ohio. It is 30 miles from Columbus, 135 miles from Cleveland and 100 miles from Toledo and Cincinnati.

All orders are given immediate attention and carefully routed for quickest delivery. If for some reason your shipment is delayed in transit, and the seed arrives too late to use, you may return it to us transportation charges collect.



Parcel Post

Seed may be sent by parcel post according to the following table. In the first, second and third zones the weight limit is 70 pounds; in the others the weight limit is 50 pounds.

Zone Rates

ZONE

2nd up to 150 miles away	1c per lb. plus 6c
3rd up to 300 miles away	2c per lb. plus 6c
4th up to 600 miles away	4c per lb. plus 5c
5th up to 1000 miles away	6c per lb. plus 4c
6th up to 1400 miles away	8c per lb. plus 3c

NOTE: Ohio is entirely in 2nd zone.

Express Rates from Marysville, Ohio

Per 100 Pounds

ILLINOIS

Chicago	\$1.50
Danville	1.39
Springfield	1.84

INDIANA

Evansville	1.84
Indianapolis	1.39
South Bend	1.39

KENTUCKY

Hopkinsville	2.14
Lexington	1.39
Williamsburg	2.06

MICHIGAN

Detroit	1.24
Grand Rapids	1.39

NEW YORK

Albany	2.32
Buffalo	1.84
New York	2.44

OHIO

Athens	\$1.00
Cincinnati	1.09
Cleveland	1.09
Freeport	1.09
Mansfield94
Portsmouth	1.39
Toledo94
Youngstown	1.39

PENNSYLVANIA

Clearfield	1.84
Meadville	1.39
Philadelphia	2.32
Pittsburgh	1.54
Scranton	2.32

TENNESSEE

Fayetteville	2.44
Knoxville	2.21

WEST VIRGINIA

Bluefield	1.84
Huntington	1.39
Morgantown	1.69



We Pay the Freight

On orders for three hundred pounds or more we pay the freight charges to thirteen of the East Central States. While we do not pay express charges we will, on orders of 300 pounds, allow the equivalent of the freight charges.

The states to which this policy applies are as follows:

Ohio	Illinois	Kentucky
Pennsylvania	Virginia	District of Columbia
West Virginia	Michigan	
Maryland	New Jersey	Delaware
New York	Indiana	

Outside those states we will allow 35 cents per one hundred pounds toward the transportation charges on orders totaling 300 pounds.

Please bear in mind that in spite of our reasonable quotations and the freight paid provision we commend Scott's Seed to you primarily on the grounds of superior quality. There is your real opportunity to save.



Legal Weight and Quantity per Acre

	Weight Per Bu.	Pounds Sown	Per Acre
<i>Legumes</i>			
Alfalfa	60	10 to 15	
Clovers:			
Red	60	10 to 15	
Mammoth	60	10 to 15	
Alsike	60	5 to 8	
Sweet (hulled seed)....	60	12 to 15	hulled seed
(unhulled).....	30	15 to 20	unhulled seed
Crimson	60	10 to 14	
White Dutch	60	6 to 8	
Japan	25	5 to 7	
Soybeans	60	90 to 150	drilled solid
Field Peas	60	45 to 60	in rows
Vetch	60	90 to 100	with oats
		25 to 45	with 1 bu. rye
<i>Grasses</i>			
Canada Blue Grass	14*	20 to 30	
Kentucky Blue Grass	14*	30 to 35	
Orchard Grass	14	25 to 30	
Meadow Fescue	24	20 to 24	
Redtop	14*	14 to 20	solid seed
Timothy	45	10 to 15	
Lawn Grass Seed	50	100	
<i>Forage Crops</i>			
Dwarf Essex Rape	50	4 to 7	
Millet	50	40 to 50	
Sudan Grass	40	20 to 30	
Sorghum or Cane	50	70 to 90	
Sunflower	32	6 to 8	
<i>Grain</i>			
Barley	48	90 to 100	
Buckwheat	50	50 to 60	
Corn (field)	56	8 to 10	
Oats	32	64	
Rye	56	80 to 100	
Wheat	60	120	

* Legal weights for grasses given, actual weight of recleaned seed much greater.

O. M. SCOTT & SONS
COMPANY



MARYSVILLE
OHIO